

MUSCULAR-SKELETAL DISORDERS – Clinical Outcomes Studies

PMS1

THE EFFECT OF POSITIONING THE LOWER EXTREMITIES ON POSTOPERATIVE BLEEDING AFTER TOTAL KNEE REPLACEMENT

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OBJECTIVES: Postoperative blood-saving is high-priority after every planned surgery. The aim of this study was to analyse the effect of positioning of lower extremities on the postoperative bleeding after total knee replacement surgery. **METHODS:** Sixty patients from the orthopaedic department of Zala County Hospital who were operated on for insertion of a unilateral total knee prosthesis with cement and got autologous blood transfusion (age 35-80 years), were randomly assigned to three intervention groups. In Group I (n=20), patients were in normal laying position, in Group II (n=20), hips were positioned in flexion and knee in extension and in Group III (n=20), hips and knees were positioned in 30° flexion in the first 6 postoperative hours. The surgical technique, the surgeon and the anticoagulant treatments were the same. Data collection: medical records, haemoglobin and haematocrit. For the clinical parameters, t-tests, ANOVA and Scheffe post hoc tests were used. Statistical significance was established at the α -level of 0.05, and IBM SPSS 20.0v was used. **RESULTS:** During the first six postoperative hours positioning not affected significantly on the volume of bleeding and recirculated blood volume (Group I: 615.0±247.3, Group II: 600.0±358.2, Group III: 715.0±392.3 ml, ANOVA: p=0.714; post hoc: p1-2=0.995, p1-3=0.805, p2-3=0.751), either in hours 6-72 (Group I: 775.0±227.6, Group II: 762.0±332.8, Group III: 960.0±400.6 ml, p=0.335; p1-2=0.996, p1-3=0.462, p2-3=0.414). Most units of homologous transfusion were needed in Group II (10 units). Position had not effect on the intensity of pain and value of the active range of motion of the knee (p=0.682 vs. p=0.585) either in haemoglobin and haematocrit values (p=0.362 vs. p=0.559). **CONCLUSIONS:** These results of the present study suggest that the postoperative positioning of the lower extremities after knee replacement not affected the postoperative bleeding, the pain and the range of motion of the knee joint.

PMS2

RHEUMATOID ARTHRITIS AND ISCHEMIC HEART DISEASE IN PATIENTS FROM BLUMENAU - BRAZIL

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OBJECTIVES: Patients with rheumatoid arthritis (RA) have a higher risk of ischemic cardiac events compared with the general population. This would be explained not only by the greater presence of traditional risk factors, but also by the systemic inflammatory nature of arthritis. To compare the prevalence of ischemic heart disease (IHD) in a target RA population with the international prevalence data. **METHODS:** Cross-sectional study including 183 adult patients with code M05-M06 (ICD-10) attended in primary or secondary care units from Blumenau city, southern Brazil, in 2014. Data collection was performed through structured personal interview and, if necessary, later by phone. The presence of IHD was defined as acute myocardial infarction, unstable angina, percutaneous coronary intervention or coronary artery bypass graft that have occurred after the diagnosis of RA. **RESULTS:** 153/183 patients were female (83.6%), mean age of 56.9 years and disease mean duration of 12.1 years. The number of cases with first acute myocardial infarction, unstable angina or myocardial revascularization after the diagnosis of rheumatoid arthritis was 7 (3.8%), two men and five women, two of those fatal, one of each sex. When the international prevalence are in Denmark 2.6%, Sweden 3.3%, Netherlands 3.8%, UK 4.8%, France 4.1%, Canada 3.5%, US 3.7%, China 3.5%, Russia 5.1%, New Zealand 5.2%. **CONCLUSIONS:** The result shows that the prevalence of coronary ischemia in patients with rheumatoid arthritis from Blumenau is similar to the prevalence observed in other countries.

PMS3

INCREASED RISK OF OSTEOPOROSIS IN DEPRESSED PATIENTS: A REAL WORLD DATA STUDY CONDUCTED IN ITALY

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OBJECTIVES: Depression is a chronic debilitating disease with high prevalence that considerably affects quality of life. The relationship between depression and osteoporosis has been demonstrated, but the evidence is heterogeneous. The aim of the present study is to investigate about this relationship in the Italian primary care setting. **METHODS:** This was a retrospective analysis based on data extracted from Italian IMS Health Longitudinal Patient Database. Two cohorts have been defined: patients with a diagnosis of Depression (Index Date) during the period January 2004 - December 2010 and without neither Depression neither Osteoporosis diagnosis during the 5 years period preceding the Index Date; patients with a first contact (Index Date) during the period January 2004 - December 2010 that are not in the previous cohort (free from Depression) and without neither Osteoporosis neither Depression diagnosis during the five years period preceding the Index Date. Patients in both the two cohorts have been followed-up until one of the following event occurred first: Osteoporosis diagnosis registration, death, end of registration with the GP, 31 December 2013. Osteoporosis incidence rates have been separately calculated in the two cohorts and Osteoporosis cumulative incidence curves have been estimated using Kaplan Meier methods and compared performing log rank tests. Both univariate and multivariate Cox proportional hazard models were performed. **RESULTS:** Osteoporosis incidence was higher in the cohort of depressed patients (2.33 cases per 100 person years vs 1.22 cases per 100 person years) and results were confirmed by the log rank test (p<0.001). Increased risk of developing osteoporosis for depressed patients was shown both by univariate proportional hazard model (HR=1.75, CI=[1.72,1.78]) and multivariate proportional hazard model (HR=1.15, CI=[1.13, 1.17]). **CONCLUSIONS:** Results from this study suggests that the relationship between Depression and Osteoporosis is confirmed also in the primary care setting in Italy.

PMS4

APPLYING WEIGHTED CUMULATIVE EXPOSURE MODELS TO PATTERNS OF NONSPECIFIC SYMPTOM CONSULTATIONS FOR EARLY DIAGNOSIS: A PRIMARY CARE DATABASE STUDY OF KNEE PAIN AND OSTEOARTHRITIS

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OBJECTIVES: To develop and validate predictive models for estimating risk of early diagnosis of knee osteoarthritis (OA) by weighted cumulative exposure (WCE) function scores of prior knee pain consultations. **METHODS:** Both derivation and validation datasets were from an electronic healthcare record (EHR) database (Consultations in Primary Care Archive [CiPCA]) in England. WCE functions for modelling cumulative effect of time-varying knee pain consultations weighted by recency was derived as predictive tool in a population based case-control sample and validated in a prospective cohort sample. Two sets of WCE function scores: WCE (Half-Normal) score and WCE (Spline) score were evaluated and compared on model fitness, discrimination, and calibration both in derivation and validation phases. **RESULTS:** People with the most recent and the most frequent knee pain consultations were more likely to have high WCE scores (both sets) and these were associated with increased risk of knee OA diagnosis both in derivation and validation phases. Better model fit, discrimination, and calibration were observed for models with WCE (Spline). **CONCLUSIONS:** WCE functions can be used to model pre-diagnostic symptoms within routine EHR data and may provide novel low-cost predictive tools that may contribute to early diagnosis.

PMS5

CLINICAL EFFECTIVENESS OF BISPHOSPHONATES FOR PREVENTION OF FRAGILITY FRACTURES: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

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OBJECTIVES: To assess the relative efficacy of bisphosphonates (alendronate, risedronate, ibandronate and zoledronate) for the treatment of Osteoporosis using network meta-analysis (NMA). **METHODS:** A systematic review of the literature was conducted using PRISMA guidelines. A network meta-analysis was used to determine the relative efficacy of treatments on four fracture outcomes (vertebral, non-vertebral, hip and wrist) and percentage change in femoral neck bone mineral density (BMD). Treatment effects were modelled using an exchangeable treatment effects model. Heterogeneity in treatment effects was explored by considering potential treatment effect modifiers using meta-regression. Where appropriate, inconsistency between direct and indirect evidence was assessed using node-splitting. **RESULTS:** 46 randomised controlled trials (RCTs) were identified. Twenty seven RCTs provided fracture data and 35 RCTs provided BMD data for analysis. Zoledronate was associated with the greatest treatment effect on vertebral fractures (HR 0.41, 95% CrI 0.28-0.56) and percentage change in BMD (3.21, 95% CrI 2.52-3.86) compared to Placebo. The greatest treatment effect on non-vertebral and wrist fractures was given by risedronate (HR 0.72, 95% CrI 0.53-0.89 and HR 0.77, 95% CrI 0.44-1.24, respectively). For hip fractures the greatest treatment effect was given by alendronate (HR 0.78, 95% CrI 0.44-1.30). **CONCLUSIONS:** All treatments were associated with beneficial effects on fractures and femoral neck BMD relative to placebo. For vertebral fractures and percentage change in BMD the treatment effects were statistically significant for all treatments. Pairwise comparisons between treatments indicated that no active treatment was statistically significantly more effective than any other active treatment for fracture outcomes. There was some heterogeneity in treatment effects between studies suggesting differential treatment effects according to study characteristics. However, there was no evidence of differential treatment effects with respect to gender and age.

PMS6

COMPLIANCE WITH ALLOPURINOL AMONG HYPERTENSIVE PATIENTS WITH GOUT DIAGNOSIS AND THE RELATIONSHIP TO ONSET OF END-STAGE RENAL DISEASE

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OBJECTIVES: Risk of end-stage renal disease (ESRD) in both hypertension and gout has been examined in the literature. However, the impact of allopurinol adherence on primary prevention of ESRD has not been assessed. The objective is to evaluate impact of better allopurinol adherence on ESRD onset. **METHODS:** A cohort of 2752 patients with gout diagnosis was reconstructed using the Québec RAMQ and MED-ECHO administrative databases. New users of allopurinol, aged 45-85 years, with a diagnosis of hypertension and treated with an antihypertensive drug between 1997-2007 were eligible. A nested case-control design was used to study ESRD occurrence. Every ESRD case was matched for age, sex and duration of follow-up for up to 15 controls. Adherence level was assessed as medication possession ratio. Conditional logistic regression models were used to estimate rate ratios (RR) of ESRD adjusting for covariables. **RESULTS:** Patients had a mean age of 68 years, 82% were men, approximately 50% had ≥ 1 cardiovascular disorder, 33% had dyslipidemia, 21% had diabetes, 15% had chronic kidney disease, and 21%, 33%, and 42% were taking thiazides, low-dose aspirin, and NSAIDs, respectively. Clinical characteristics were similar among allopurinol adherent versus non-adherent patients. Major risk factor for ESRD onset was chronic kidney disease at stages 1-3 (RR: 8.00; CI: 3.16 -22.3), and hypertension severity (≥ 3 vs. <3 antihypertensive treatments) was a trending risk factor as a crude estimate (RR: 1.94; CI: 0.68-5.51). Of 341 patients (cases, n=22; controls, n=319), high adherence ($\geq 80\%$) to allopurinol, versus lower adherence (<80%), was associated with a lower rate of ESRD onset (RR: 0.35; confidence interval [CI]: 0.13-0.91). **CONCLUSIONS:** This population-based study suggests that better allopurinol adherence may be associated with risk reduction of new-onset ESRD in hypertensive patients. Further research is needed, as this study was limited by the small number of cases and potential residual confounding factors.